

CONTROL OF PREHARVEST FRUIT DISEASES OF AVOCADO

Part II: A preliminary report on the effects of spray timing on the incidence of *Cercospora* spot of avocados in the Burgershall Area

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ABSTRACT

*The optimum timing for the first pre-harvest spray application against *Cercospora* spot of avocados for the Burgershall area was found to fall between the third week of October and the second week of November.*

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*Die optimale toedieningstyd vir die eerste vooroesbespuiting van avocado's teen *Cercospora*-vlek val tussen die derde week van Oktober en die tweede week van November.*

INTRODUCTION

Considerable work has been done by Darvas (1982) to establish critical infection periods for *Cercospora* spot (*Pseudocercospora purpurea*) of avocados. He proposed numerous models to forecast the number of *P. purpurea* spores released in a given orchard; enabling one to choose the optimum timing of pre-harvest sprays.

According to Darvas (1978), the most critical time for pre-harvest sprays against *Cercospora* spot is from November to January. Further experiments conducted at Westfalia Estate by Darvas and Kotzé (1979), showed that significant spore release by *P. purpurea* only started in November.

The present recommendation for the control of *Cercospora* spot of avocado, states that Benlate or Copper oxychloride must be sprayed at a rate of 50 g/100 l and 300 g/100 l respectively, commencing mid-to end-November. Follow-up sprays should be applied in December and January (Vermeulen, Swart, Krause, Hollings & Nel, 1990).

For the past few seasons certain growers, in the Burgershall area, have been commencing with Benlate or Copper sprays in October and apparently have been getting improved control of *Cercospora* spot.

The purpose of this study was to establish the effects of Benlate sprays early in October versus later in November on the incidence of *Cercospora* in the Burgershall area and to correlate this with spore release data.

MATERIALS AND METHODS

Eight-year-old Fuerte trees in a block on Mr Koekoemoer's farm in Burgershall were used for the experiment. There were five randomly selected trees in each treatment. The chemicals were applied with a high volume applicator. The chemicals used in the experiment were Copper oxychloride 85% WP and Benomyl 50% DF. Weather data for the region was obtained from the Burgershall Experimental Station and used to calculate predicted spore release for the duration of the experiment, according to the formulae proposed by Darvas (1982).

TABLE 1 The effect of spray timing on the incidence of Cercospora Spot

Treatment	% Clean Fruit Cercospora
CONTROL (UNTREATED)	0 c
BEN 05/10/89 Cu 17/11/89 Cu 15/01/90	26,65 b
BEN 13/10/89 Cu 23/11/89 Cu 15/01/90	23,3 b
BEN 19/10/89 Cu 01/12/89 Cu 15/01/90	51,3 a
BEN 26/10/89 Cu 07/12/89 Cu 15/01/90	38,6 ab
BEN 09/11/89 — Cu 15/01/90	40,0 ab
BEN 16/11/89 — Cu 15/01/90	27,3 b

BEN: Benomyl

Cu: Copper oxychloride

Values are the mean of five replicates. Values followed by the same letter do not differ significantly ($P = 0,05$), according to Duncan's Multiple Range Test.

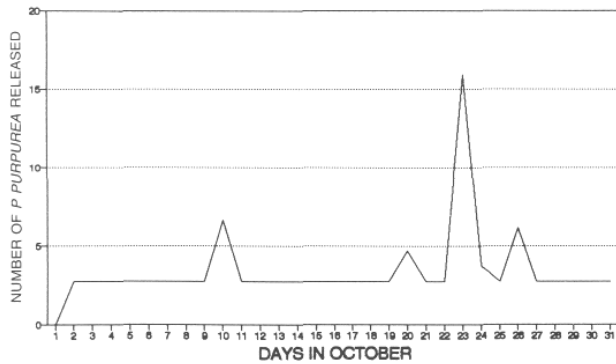


Fig 1 Conidia spore release of *P Purpurea* for October '89 at Burgershall.

Based on the formula of Darvas (1982): Number of *P Purpurea* conidia spores = $2,71 + 0,33X$ where X is the daily rainfall.

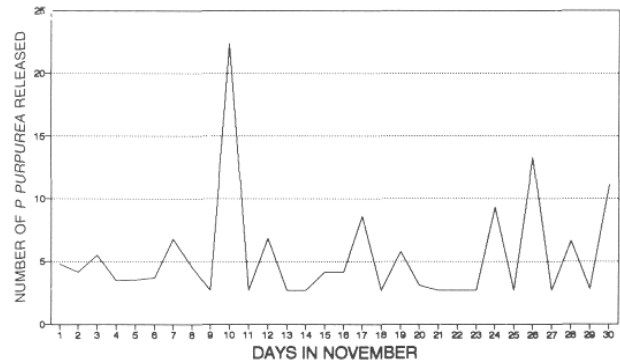


Fig 2 Conidia spore release of *P Purpurea* for November '89 at Burgershall.

Based on the formula of Darvas (1982): Number of *P Purpurea* conidia spores = $2,71 + 0,33X$ where X is the daily rainfall.

RESULTS AND DISCUSSION

From the results it is clear that the spray treatment which commenced on the 19th of October gave the best control of *Cercospora* spot, namely 51% clean fruit (Table 1). Treatments commencing before this date or after the 9th of November, controlled *Cercospora* spot significantly less. The results also show the peak spore release periods. One took place around the 23rd of October (Figure 1). The other took place around the 10th of November (Figure 2). The treatments commencing closest to these dates gave the best control of *Cercospora* spot.

It would seem that the optimum timing for the first spray in the Burgershall area falls between the third week of October and the second week of November. This is slightly earlier than the present recommendation of Vermeulen *et al* (1990). As these results are based only on the data from one season, follow up trials will be necessary to verify this.

ACKNOWLEDGEMENTS

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